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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,081	01/10/2007	Ramon Rodriguez Cuartas	293703US0PCT	5870

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EXAMINER	
BELYAEV, YANA	
ART UNIT	PAPER NUMBER
1741	

NOTIFICATION DATE	DELIVERY MODE
10/27/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/589,081	RODRIGUEZ CUARTAS ET AL.	
	Examiner	Art Unit	
	YANA BELYAEV	1741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *15-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. The Applicants' foreign priority claim has been perfected by the submission of a certified English translation of their priority document. The office action submitted 23 June 2010 has been overcome.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "consists essentially of nitrogen" in claim 3 is an ambiguous term which renders the claim indefinite. The term "consists essentially of nitrogen" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree (at what nitrogen content is "consists essentially of nitrogen" reached, or, what other gases may be included in "consists essentially of nitrogen"?), and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-3, 5-8, 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,027,074 (Cross hereinafter) in view of US Patent Application 2002/0162358 (Jeanvoine hereinafter).

Regarding claims 1-3, 7-8 and 19, Cross discloses producing polycrystalline lead germinate film by a modified float glass technique (col. 3, lines 35-37) wherein the lead germanate comprises 78% by weight lead oxide and 22% by weight germanium oxide (col. 3, lines 60-65). The percent calculations were made given that the lead oxide and germanium oxide were weighed out in stoichiometric proportions for the reaction given on line 64 of column 3 (col. 3, lines 60-65) given that the molar mass of lead oxide is 223.21 g/mol and the molar mass of germanium oxide is 104.64 g/mol. It is interpreted by the examiner that the scope of the definition of "flat glass" includes a glass film. Furthermore, Cross states that the density of the polycrystalline lead germinate is lower than the density than the molten metal bath (col. 3, lines 37-40).

Cross does not disclose that the floating occurs in a float plant with a neutral gaseous atmosphere.

However, Jeanvoine discloses apparatuses designed to melt and refine glasses of highly varied compositions, in this case glasses intended to feed a float plant for producing flat glass (paragraph 75), wherein the atmosphere in the float plant is a nitrogen atmosphere (paragraph 111). Since the atmosphere is a nitrogen atmosphere, it is interpreted by the examiner that the atmosphere comprises no oxygen. In the alternative, it would have been obvious to one of ordinary skill in the art at the time of the invention to have limited the amount of oxygen to less than 5 ppmv oxygen in order to ensure purity of the nitrogen atmosphere. Since the atmosphere is a nitrogen atmosphere, the atmosphere does not comprise hydrogen.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the nitrogen atmosphere of Jeanvoine to the invention disclosed by Cross. The motivation to do so, disclosed by Jeanvoine, would have been the rationale that a non-oxidizing atmosphere above the melt will prevent the furnace walls of the float plant from oxidizing (paragraph 11).

Regarding claim 5, Cross teaches that the temperature of the floating glass is between about 450 degrees Celsius and the glass transition temperature which ranges from about 720 degrees Celsius to 640 degrees Celsius (col. 1, lines 43-49).

Regarding claim 6 and 11, Cross does not disclose a molten metal treatment station, but Jeanvoine who discloses apparatuses designed to melt and refine glasses of highly varied compositions, in this case glasses intended to feed a float plant for producing flat glass

(paragraph 75), teaches that the float plant includes a molten metal treatment station (paragraph 89-90).

Jeanvoine also teaches that before the float plant, the glass is melted in a furnace that includes at least one submerged burner (Figure 1, "1' ").

It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of Jeanvoine with Cross, since Jeanvoine teaches forming glass sheets without any batch stone, bubbles or any cause of defects (paragraph 3).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cross in view of Jeanvoine as applied to claims 1-3, 5-8, 11 and 19 above, and further in view of US Patent Application 2005/0028559 (Hiromatsu hereinafter) and US Patent 5,120,579 (Gardner hereinafter).

Regarding claim 4 Cross in view of Jeanvoine does not disclose that the temperature of the bath of molten metal is lower than the temperature of a bath of molten metal in a float plant for a soda-lime-silica glass containing no lead.

Hiromatsu, however, discloses that the molten metal in a float plant for a soda-lime-silica glass containing no lead is between 600 and 1050 degrees Celsius and is directly correlated to the glass transition point of soda lime silica glass, which is 550 degrees Celsius (paragraph 5). Gardner discloses that the glass transition point of glass comprised substantially of lead oxide is about 300-400 degree Celsius (column 1, lines 46-49).

Thus, it would have been obvious for one of ordinary skill in the art at the time of the invention to have the temperature of the bath of molten metal be lower in a float plant for a glass

containing lead oxide than for a soda lime silica glass containing no lead, since the glass transition point of glass comprised substantially of lead oxide is less than the glass transition point of soda lime silica glass.

5. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cross in view of Jeanvoine as applied to claims 1-3, 5-8, 11 and 19 above, and further in view of *Structure Changes in the Molten Oxide System: Lead Oxide-Germanium Dioxide* (Riebling hereinafter).

Regarding claims 9-10, Cross does not disclose the density of the polycrystalline lead germinate.

However, as shown in Table II on page 960 of Riebling, the density varies depending on the percent of lead oxide (page 960, Table II).

Since Cross discloses that the lead germanate comprises 78% by weight lead (col. 3, lines 60-65), which encompasses the claimed at least 30% by weight lead oxide, at least 45 % by weight lead oxide, and at least 60% by weight lead oxide, it is interpreted that the density of the glass also falls within the claimed ranges since the density is primarily dependent on the percent of lead oxide (Riebling, page 960, Table II).

6. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cross in view of Jeanvoine as applied to claims 1-3, 5-8, 11 and 19 above, and further in view of WO 03/045859 (Maugendre hereinafter).

US Patent 7,428,827 is used as an English Language translation of WO 03/045859. All citations refer to US Patent 7,428,827.

Regarding claims 12-14, Jeanvoine teaches a first and a second tank in a series (Fig. 1, "2" and "9"), but does not disclose that the second tank is fed with lead oxide.

Maugendre also teaches a float plant which includes a furnace with two compartments (Fig. 2, "1" and "2"). Maugendre does not teach that the second tank is fed with lead oxide, but Maugendre does teach that a composition is fed to the first tank which includes alumina, silica, alkali metals, alkaline-earth-metals and boron in their oxidized form and that a specific percent of float glass cullet is fed to the second tank (col. 9, lines 3-10 and 46-59). Maugendre teaches that the cullet used to feed the second tank comes from the flat glass industry and in this case is soda-lime-silica glass (col. 10, lines 1-3). The first tank is equipped with at least one submerged burner (co. 7, lines 54-56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have fed lead oxide in the second tank, since according to Maugendre the float glass cullet is added to the second tank and the batch materials are added to the first tank.

Maugendre also teaches that the electric furnace (module 1) is at a lower temperature than the submerged burner furnace (module 2) (col. 10, lines 14-17).

It further would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of Maugendre with Jeanvoine since two melting modules using different technologies allows the greatest benefit to be derived from their advantages: on the one hand, use is made of the reliability of a proven industrial solution (electric melting, fuel-fired furnace), and of the quality of the glass obtained therewith, and, on

the other hand, the high efficiency, the great flexibility of use, and the less stringent requirement in terms of the materials that can be melted of a submerged-burner melting mode is also enjoyed. Their complementing natures are played off against each other (col. 8, lines 58-67).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US Patent 5,073,524 (Speit hereinafter) in view of US Patent 5,221,646 (Blackburn hereinafter).

Speit discloses radiation shielding windows to be employed in various facilities such as research installations, employing or separating radioactive isotopes, and reprocessing plans (col. 1, lines 25-30 and Fig. 4), wherein the windows comprise 24-46 % by weight of lead oxide (col. 3, line 68). The window comprises multiple glass layers, wherein at least one of layers A-D comprises the glass according to this invention (col. 7, lines 10-13 and Fig. 4, "A"-"D"), wherein it is depicted in Figure 4 that all of the glass layers are flat panes.

Speit does not disclose the method by which the flat, radiation shielding windows are produced.

Blackburn discloses a neutron absorbing glass sheet which comprises from about 1 to about 25 weight percent lead oxide (col. 3, line 24) and is formed using a float glass process similar to that employed to form conventional commercial glass as is well known in the art (col. 3, lines 59-62). It is interpreted by the examiner that the scope of "about 25 weight percent" includes 30 weight percent.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have made the flat window disclosed by Speit by the float glass process disclosed by Blackburn for glass sheets comprising from 1 to about 25 percent lead oxide. The motivation to do so would have been the rationale that a float glass process is a well known method in the art to form a glass sheets. It would have also been known to one of ordinary skill in the art at the time of the invention to have applies the float glass process to form glass sheets comprising 1 to about 25 weight percent lead oxide, as disclosed by Blackburn. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the method for forming glass sheets comprising 1 to about 25 weight percent lead oxide disclosed in Blackburn to forming flat window panes comprising 24 to 46 percent by weight lead oxide, as disclosed by Speit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YANA BELYAEV whose telephone number is (571)270-7662. The examiner can normally be reached on M-Th 8:30am - 6pm; F 8:30 am- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on (571) 272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. B./
Examiner, Art Unit 1741

/Matthew J. Daniels/
Supervisory Patent Examiner, Art Unit 1741